APPENDIX I
MONITORING PLAN

MONITORING COMMON TO ALL ACTION ALTERNATIVES

PROPOSED MONITORING FOR THIS PROJECT - APPLICABLE TO ALL ACTIVITIES

Monitoring is a process of gathering information through observation and measurement to assure the goals, objectives and standards of the Nez Perce Forest Plan are implemented and to ensure implementation and effectiveness of design criteria or mitigation.
Two forms of monitoring are proposed: 1) implementation and 2) effectiveness. These three types of monitoring are described below:

- Implementation monitoring is used to determine if management practices are implemented as planned in the Plan (Nez Perce Forest Plan and/or this EIS).
- Effectiveness monitoring is used to determine if management practices, as designed and executed, are effective in meeting project objectives, as well as goals, objectives, and standards of the Plan (Nez Perce Forest Plan).

An annual report will document accomplishments, monitoring results and the planned accomplishments for the next year.

Implementation monitoring of the following design criteria and mitigation measures would be conducted with all action alternatives on a sample basis. Monitoring would be accomplished by an interdisciplinary and/or multi-party team through a combination of any of the following methods:

- Review contract specifications
- Review designs and plans of operation
- Review contract administration reports (daily diaries)
- Review activities on the ground before, during and after implementation.

Implementation of the following design criteria and mitigation measures, as listed in Chapter II (Table II-2 and Table II-3), would be monitored. Numbers and letters in parentheses correspond to those in the tables.

a. Road Decommissioning: (12,17)
b. Temporary Road Construction and Road Reconditioning: (2, 12, 13, 17, 19, 44)
c. Culvert Replacement: (18, 19, 21)
d. Conversion of Roads to Trails: (24)
e. Fuel Haul, Storage and Spill Containment: (20)
f. Transport: (20, M)
g. Storage and Transfer: (20)
h. Spill Containment: (20)
i. Prescribed Fire and Smoke Management: (5, 25, 26, 27, 28)
j. Timber Harvest: (1, 2, 3, 4, 5)
k. Sensitive Plants and Exotic Vegetation Management: (42, 43, 44, R, S)
l. Soil Resource Protection: (8, 9, 10, 11, 12, 13, 14, 15, 17, C, D, E, F, G, K)
    1. Site-specific review prior to implementation for landslides or prior harvest impacts; with consequent adjustment of harvest or compensatory restoration as needed. Scientist with layout crew.
    2. Monitoring during project implementation:
        a. Monitor progress toward compliance with soil quality standards (as amended), to identify activities, settings, or operating conditions that result in a trend toward non-compliance. Adjust activities to achieve compliance or identify additional required restoration activities. Contract administrator and soil scientist.
        b. Monitor coordination of timber harvest and local soil restoration

activities, including areas of prior impacts. Contract administrator.

c. Monitor that soil restoration is being done as recommended, including scarification, recontouring, addition of slash, litter or other organic matter, seeding and coordination with road decommissioning or harvest as appropriate. Contract administrator and soil scientist.

m. Stream Restoration: (17, 18, 19, 21, A, B, J)
n. Snags: (34, O)
o. Access management: (28, 37, 28, 39, 40, L, M)
p. Wildlife: (29, 30, 31, 32, 33, 35, 36, N)
q. Heritage Resources: (41, 42, 43, P, Q)
r. Recreational Activities: (22, 23, 24)

Effectiveness monitoring to determine if design criteria achieve their objectives. Effectiveness of the following design criteria would be monitored. Numbers in parentheses corresponds to those in the Table II-2, in Chapter II. Effectiveness monitoring would also be used to determine if treatments help meet goals and objectives, as described in Chapters I and II of this EIS. Effectiveness monitoring would be accomplished using established protocols specific to each criterion, issue or indicator. Effectiveness monitoring of the following items would be conducted with any action alternative.

a. Road Decommissioning: (12, 17). Report findings in forest monitoring report.
    1. Effectiveness of road decommissioning and soil restoration to reduce erosion sources. Identify sample monitoring sites and before and after photos and characterization.
    2. Effectiveness of road decommissioning to recover native vegetation: Vegetation frequency and cover plots 3 years after decommissioning.
b. Temporary Road Construction and Road Reconditioning: (2, 12, 13, 17, 19, 44)
c. Effectiveness of soil restoration to improve permeability on decompacted sites: Permeability or resistance measurements on compacted and decompacted sites. Report findings in forest monitoring report.
d. Monitor compliance with snag/green tree and down wood retention guidelines upon completion of activities. Use accepted common stand exam protocols, including down wood in 10 randomly selected units. Sapling would be after fuels treatment. Soil scientist.
e. Culvert Replacement: (18, 19, 21), including turbidity monitoring.
f. Conversion of Roads to Trails: (24)
g. Effectiveness of road-stream crossing removed (12, 17, 19), including turbidity monitoring.
h. Prescribed Fire and Smoke Management: (5, 25, 26, 27, 28). Effectiveness of prescribed fire to achieve desired stand density, amount of fuels reduction and reduction in fire risk.
i. Timber Harvest: (1, 2, 3, 4, 5).
    1. Effectiveness of timber harvest to achieve desired stand density, size class and species mix, cover types and canopy layers.
    2. Monitor compliance with soil quality standards upon completion of activities: using R6 protocols on a random 10 percent sample of tractor logging units. Soil scientist.
j. Sensitive Plants and Exotic Vegetation Management: (42, 43, 44). Effectiveness of exotic species management to reduce exotic species populations and eradicate new populations.
k. Wildlife: (29, 30, 21, 32, 33, 35, 36, 42, 43, 44)
l. Recreation. Effectiveness of trail reconstruction and conversion of roads to trails to achieve recreation needs.
m. Stream Restoration. Effectiveness of stream restoration activities to restore

fish habitat elements, especially for the Red River Narrows project, including turbidity monitoring.

FOREST PLAN MONITORING

As part of implementing the Nez Perce Forest Plan the Nez Perce Forest monitors a multitude of effects and conditions within the Forest. The Forest Plan Monitoring items are displayed on pages V-4 through 8 and Appendix O of the Nez Perce Forest Plan. These monitoring activities are applied on a sample basis randomly across the Forest or among projects. Some of that monitoring may occur within the Red Pines analysis area. Forest Plan monitoring is reported in an annual monitoring and evaluation report.

OTHER ONGOING MONITORING

This section summarizes some of the ongoing monitoring that would be used to adjust implementation in response to monitoring findings, where modification would better meet objectives of design criteria or Forest Plan standards. These monitoring activities are not required as part of any action alternative proposed with the Red Pines project.

Heritage Monitoring

Monitoring: Where pre-burning activities have been performed (e.g. fuels reduction, hand line construction and back burning, wrapping) and in specific cases in other types of treatment areas such as salvage or thinning units, monitoring of resource conditions may be required during and/or after project implementation. A qualified archaeologist would monitor resource conditions and in the case of burn units, fire personnel would be pre-positioned in strategic locations to protect the resource.

Data Recovery: If project activities are such that none of the above forms of mitigation can be performed for a significant site, and no acceptable alternatives exist, then data recovery would be required to protect and document the site. Data recovery or documentation may take the form of archaeological excavation and removal of the resource, documentation of historic structures meeting current professional standards such as HABS/HAER, or some other form of highly intensive documentation may be needed. Data recover is a mitigation measure of last resort and is often time consuming, expensive, and ultimately removes the historic resource from its primary context.

Post-burn Survey: In those areas where there are sites that may benefit from a cool burning, relatively fast moving fire, and/or where long burning, high energy fuels have been removed or not are present, post fire survey would be recommended to reassess conditions and NRHP eligibility of the resource. Post-burn survey would also allow for the locating and documentation of new features or artifacts previously obscured by surface vegetation.

Aquatic Monitoring

Forest Plan trend data on fish habitat and channel morphology have been collected at three long-term monitoring sites in the Red River Watershed. Two of these sites are located in upper Red River and one is in Trapper Creek. The upper Red River sites will not be affected by this project. There are timber harvest, road reconditioning and road decommissioning activities planned under this project above the Trapper Creek site. Plans are to continue this instream monitoring. Stream gaging stations are in place on upper Red River, South Fork Red River and Trapper Creek. Sampling at these gages includes streamflow, suspended sediment, bedload sediment, conductivity, and water temperature. There are a full range of activities planned under this project above the South Fork Red River site and timber harvest, road reconditioning and road decommissioning above the Trapper Creek site. Current plans are to continue monitoring at all three sites, though Trapper Creek may be considered for discontinuance once existing data have been fully analyzed.

Idaho Department of Fish and Wildlife maintain stream channel monitoring sites within the Red River Wildlife Management Area. Current plans are to continue monitoring at these sites.

The BLM Cottonwood Office has established and monitored an instream site near the mouth of Red River (River Mile 0.1) since 1993 (*most downstream point*). The Nez Perce National Forest

will coordinate with the BLM in terms of continuation of this site and utilization of the data. Monitoring protocols in place at this site include substrate sediment composition and water temperature. Stream discharge and sediment yield are not measured at this site.

There are current efforts to complete monitoring on the main South Fork Clearwater River in relation to the TMDL. The TMDL Technical Advisory Committee is currently developing the plans.

In addition, the forest is currently consulting with the NOAA-Fisheries and the Fish & Wildlife Service on the Red Pines project. We will receive Biological Opinions that may require addition monitoring. The required monitoring would be added to monitoring plans for the Red Pines project.

Noxious and Exotic Species Monitoring
Survey managed areas after treatment and implement control measures to minimize expansion of noxious and exotic vegetation as prioritized by the overall forest weed program. These measures may include mechanical, chemical or biological methods.

Through implementation of the Clearwater Basin Weed Management strategy several elements are monitored throughout the Clearwater Basin, including the South Fork Clearwater River and Red Pines analysis area. Monitoring focuses on spread or suppression of weeds, and effectiveness of bio-control and herbicide treatments. This monitoring is detailed in Appendix I of the Clearwater Weed Management strategy.

Prescribed Fire Monitoring
The Programmatic Biological Assessment for the Fire Management Program (South Fork Clearwater River Biological Assessment, 1999 p. 97) specifies monitoring items for the prescribed fire program. These monitoring items include items such as location and size, mortality levels and patch size, and riparian fire intensity. This monitoring occurs for all fire activities occurring under this Biological Assessment including the on-going prescribed burning. This monitoring would continue and would also be applicable to prescribed fire activities proposed with this project.

Wolf Recovery Monitoring
Monitoring of wolf recovery is conducted by the Nez Perce Tribe Wolf Program. Recovery continues and wolf numbers continuing growing. Currently, there are 5 wolf packs that overlap or are in close proximity to the project analysis area.

Landbird Population Monitoring
In 1993, a USFS Region wide Landbird Monitoring Program was initiated. Sample plots were established along transects distributed across all 13 national forests of Region 1. Monitoring of neotropical migrant songbird species diversity and populations is currently being done in partnership with nongame biologists of the Idaho Department of Fish & Game and overseen by researchers from the University of Montana. (Hutto, R.L. and Young, J.S., 1999)

Vegetation Monitoring
Per the Forest Plan Chapter V table V-1 and Appendix O Item 4: Review of silvicultural practices and prescriptions written for these practices. Specific items include size of openings created by timber harvest, amount and success of reforestation activities, and correlation between the practices described in the prescriptions and on-the-ground implementation.
Interdisciplinary reviews of timber sales will review the prescriptions to ensure that goals and objectives of the Forest Plan are being met through the vegetation manipulation practices.
Tree stocking surveys, first, third and fifth year after regeneration harvest (clearcut) to evaluate reforestation activities. Marking during implementation.

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